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# TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

<b>TRANSMITTAL FORM</b>		<b>Application Number</b>	10/072,975
		<b>Filing Date</b>	Feb 9, 2002
		<b>First Named Inventor</b>	Efimov, Vladimir
		<b>Group Art Unit</b>	1637
		<b>Examiner Name</b>	Riley, Jezia
Total Number of Pages in This Submission		Attorney Docket Number	ACT-1102-CIP1

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## SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	BioTechnology Law Group Daniel M. Chambers	
Signature		
Date	March 30, 2004	

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant(s): Efimov, et al.	
Serial No.: 10/072,975	
Filed: 2/9/2002	Group Art Unit: 1637
Title: Oligonucleotide Analogs, Methods of Synthesis and Methods of Use	Examiner: Riley, Jezia
Attorney Docket No.: ACT-1102-CIP1	

MAIL STOP: TC 1600  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**INFORMATION DISCLOSURE STATEMENT**

Dear Sir:

The attached Information Disclosure Statements are re-submitted with a CD containing missing references at the request of the Examiner in the October 9, 2003 Non-Final Office Action.

For Examiner's further consideration, we have enclosed a CD containing all missing references in PDF format. Courtesy copies of the partially considered Forms 1449 are also enclosed.

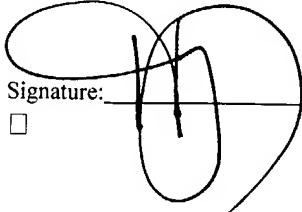
No additional fees are believed to be due for this submission; however, if fees are due, the Commissioner is authorized to charge any other required fees associated with this filing submitted herewith to **Deposit Account No. 502728** and please reference attorney docket no.: **ACT-1102-CIP1**. A duplicate copy of this document is enclosed.

It is requested that the information disclosed herein be made of record in this application.

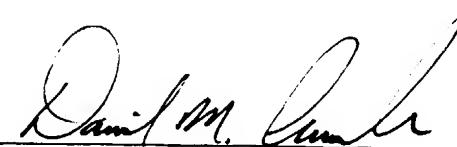
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Date of Deposit: March 31, 2004

Typed Name: Henry Betke

  
Signature: H. Betke

Respectfully submitted,

  
Daniel M. Chambers

Daniel M. Chambers  
Attorney/Agent for Applicant(s)  
Reg. No. 34561

Date: March 30, 2004

Telephone No.: 858-350-9690

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The relevance of the attached references is that this is the closest art of which Applicant is aware. Applicant submits that the above references taken alone or in combination neither anticipate nor render obvious the present invention. Consideration of the foregoing in relation to this application is respectfully requested.

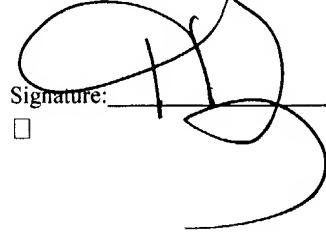
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Attorney/Agent for Applicant(s)  
Reg. No. 34561

Date: March 30, 2004

Telephone No.: 858-350-9690

**INFORMATION DISCLOSURE  
STATEMENT  
BY APPLICANT**

(Use several sheets if necessary)

Docket Number: AM-00102.P.1.1-US	Patent Number: 10/072,975
Applicant: Efimov et al.	
Filing Date: February 9, 2002	Group Art Unit: 1651

**U.S. PATENT DOCUMENTS**

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE IF APPROPRIATE
	P1	5,432,272	7/11/95	Brenner			
	P2	5,508,178	4/16/96	Rose <i>et al.</i>			
	P3	5,539,082	7/23/96	Nielsen <i>et al.</i>			
	P4	5,641,625	6/24/97	Ecker <i>et al.</i>			
	P5	5,656,461	8/12/97	Demers			
	P6	5,714,331	2/3/98	Buchardt <i>et al.</i>			
	P7	5,719,262	2/17/98	Buchardt <i>et al.</i>			
	P8	5,736,336	4/7/98	Buchardt <i>et al.</i>			
	P9	5,766,855	6/16/98	Buchardt <i>et al.</i>			
	P10	5,773,571	6/30/98	Nielson <i>et al.</i>			
	P11	5,786,461	7/28/98	Buchardt <i>et al.</i>			
	P12	5,837,459	11/17/98	Berg <i>et al.</i>			
	P13	5,861,250	1/19/99	Stanley <i>et al.</i>			
	P14	5,864,010	1/26/99	Cook <i>et al.</i>			
	P15	5,874,553	2/23/99	Peyman <i>et al.</i>			
	P16	5,888,733	3/30/99	Hyldig-Nielson <i>et al.</i>			
	P17	5,932,711	8/3/99	Boles <i>et al.</i>			

Examiner Signature		Date Considered	
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**U.S. PATENT DOCUMENTS**

EXAMINER INITIAL		DOCUMEN T NUMBER	DATE	NAME	C L A SS	SUB- CLASS	FILING DATE IF APPROPRIATE
	P18	5,972,610	10/26/99	Buchardt <i>et al.</i>			
	P19	5,977,296	11/2/99	Nielson <i>et al.</i>			
	P20	6,004,750	12/21/99	Frank-Kamenetskii <i>et al.</i>			
	P21	6,015,887	1/18/00	Teng			
	P22	6,020,124	2/1/00	Sorenson			
	P23	6,020,126	2/1/00	Carlsson <i>et al.</i>			
	P24	6,025,140	2/15/00	Langel <i>et al.</i>			
	P25	6,025,482	2/15/00	Cook <i>et al.</i>			
	P26	6,045,995	4/4/00	Cummins <i>et al.</i>			
	P27	6,060,242	5/9/00	Nielson <i>et al.</i>			
	P28	6,063,571	5/16/00	Uhlmann <i>et al.</i>			
	P29	6,107,470	8/22/00	Nielson <i>et al.</i>			
	P30	6,110,676	8/26/00	Coull <i>et al.</i>			
	P31	6,110,678	8/29/00	Weisburg <i>et al.</i>			
	P32	6,150,510	11/21/00	Seela <i>et al.</i>			
	P33	6,165,720	12/26/00	Felgner <i>et al.</i>			
	P34	6,180,770	1/30/01	Boles <i>et al.</i>			

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FOREIGN PATENT DOCUMENTS								
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	Translation	
							YES	NO
	F1	WO 92/002258	2/20/92					
	F2	WO 92/20702	11/26/92					
	F3	WO 93/10820	6/10/93					
	F4	WO 94/22892	10/13/94					
	F5	WO 94/24144	10/27/94					
	F6	WO 99/14266	3/25/99					
	F7	WO 00/56746	9/28/00					
	F8	WO 00/56748	9/28/00					
	F9	WO 00/56916	9/28/00					
	F10	WO 00/56920	9/28/00					

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	D2	Ausubel et al., Current Protocols in Molecular Biology, John Wiley and Sons (1998)
	D3	Beaucage and Caruthers, Tetrahedron Lett. 22:1859-1862 (1981)
	D4	Briegohl et al., Bioorg. & Med. Chem. Lett. 6:665 (1996)
	D5	Buchardt et al., PNAs and their Potential Applications in Biotechnology, Tibtech 11: 384-386 (1993)
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	D18	Efimov et al., Synthesis and evaluation of some properties of chimeric oligomers containing PNA and phosphono-PNA residues, <i>Nucl. Acids Res.</i> 26:566-575 (1998)
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	D38	Harlowe and Lane, <u>Antibodies, a Laboratory Manual</u> , Cold Spring Harbor Press (1988)
	D39	Heinklein et al., in Girault and Andreu (eds.) <u>The Peptides</u> , 21 <sup>st</sup> European Peptide Symposium, ESCOM, Leiden pp. 67-77
	D40	Igloi, Automated Detection of Point Mutations by Electrophoresis in PNA-containing Gels, BioTechniques 27: 798-808 (1999)
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	D42	Izvolsky et al., Sequence-Specific Protection of Duplex DNA against Restriction and Methylation Enzymes by Pseudocomplementary PNAs, Biochemistry 39: 10908-10913 (2000)

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EXAMINER INITIALS		CITATION
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	D44	Knudsen and Nielsen, Antisense Properties of Duplex- and Triplex-Forming PNAs, <i>Nucl. Acids Res.</i> 24(3): 494-500 (1996)
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	D47	Kuwahara et al., Synthesis of Oxy-Peptide Nucleic Acids with Mixed Sequences, <i>Nucleic Acids Symposium Series</i> 42: 31-32 (1999)
	D48	Lohse et al., Double Duplex Invasion by Peptide Nucleic Acid: A General Principle for Sequence-Specific Targeting of Double-Stranded DNA, <i>Proc. Natl. Acad. Sci.</i> 96(21): 11804-11808 (1999)
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	D51	Mollegaard et al., PNA/DNA Strand Displacement Loops as Artificial Transcription Promoters, <i>Proc. Natl. Acad. Sci.</i> 91: 3892-3895 (1994)
	D52	Nielsen et al., Sequence-Selective Recognition of DNA by Strand Displacement with a Thymine-Substituted Polyamide, <i>Science</i> 254: 1497-1500 (1991)
	D53	Nielsen, Applications of Peptide Nucleic Acids, <i>Current Opinion in Biotechnology</i> 10:71-75 (1999)
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	D58	Proudnikov et al., Immobilization of DNA in PolyAcrylamide Gel for the Manufacture of DNA and DNA-Oligonucleotide Microchips, <i>Analytical Biochemistry</i> 259: 34-41 (1998)

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EXAMINER INITIALS	CITATION
	D59 Rehman et al., Immobilization of Acrylamide-modified Oligonucleotides by Co-Polymerization, <i>Nucl. Acids Res.</i> 27(2): 649-655 (1999)
	D60 Sambrook et al., Molecular Cloning: A Laboratory Manual, 2 <sup>nd</sup> edition, Cold Spring Harbor Press, Cold Spring Harbor, N.Y. (1989)
	D61 Sandler and Karo, Polymer Synthesis Vol. 1, Academic Press (1992)
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	D71 Zhong et al., Detection of Apolipoprotein B mRNA Editing by PNA mediated PCR Clamping, <i>Biochem. and Biophys. Res. Comm.</i> 259: 311-313 (1999)
	D72 Advertisement for 'mVader', <i>Biotechniques</i> 28 (4): (2000)

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**INFORMATION DISCLOSURE  
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Efimov et al.

Filing Date:  
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Group Art Unit:  
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P3		6,054,272	4/25/00	Glazer et al.			
P4		6,180,767	1/30/01	Wickstrom et al.			
P5		6,232,066	5/15/01	Felder et al.			
P6		6,280,946	8/28/01	Hyldig-Nielsen et al.			
P7		6,312,956	11/6/01	Lane			
P8		6,326,479	12/4/01	Gildea et al.			

**FOREIGN PATENT DOCUMENTS**

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	Translation	
							YES	NO
F1		WO 99/60156	11/25/99					
F2		WO 00/34521	6/15/00					
F3		WO 01/01144	1/4/01					
F4		WO 01/38565	5/31/01					
F5		WO 01/68673	9/20/01					

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	D2	De Backer <i>et al.</i> , An antisense-based functional genomics approach for identification of genes critical for growth of <i>Candida albicans</i> , <i>Nat. Biotechnol.</i> 19: 235-41 (2001).
	D3	Efimov <i>et al.</i> , PNA-Related Oligonucleotide Mimics and their Evaluation for Nucleic Acid Hybridization Studies and Analysis, <i>Nucleosides, Nucleotides &amp; Nucleic Acids</i> 20(4-7), 419-428 (2001).
	D4	Eriksson <i>et al.</i> , Cell Permeabilization and Uptake of Antisense Peptide-Peptide Nucleic Acid (PNA) into <i>Escherichia coli</i> , <i>J. Biol. Chem.</i> 277: 7144-7147 (2002).
	D5	Good <i>et al.</i> , Antisense inhibition of gene expression in bacteria by PNA targeted to mRNA, <i>Nat. Biotechnol.</i> 16: 355-358 (1998).
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**INFORMATION DISCLOSURE  
STATEMENT  
BY APPLICANT**

(Use several sheets if necessary)

Docket Number:  
AM-00102.P.1.1-US

Patent Number:  
10/072,975

Applicant:  
Efimov et al.

Filing Date:  
February 9, 2002

Group Art Unit:  
1651

**U.S. PATENT DOCUMENTS**

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE IF APPROPRIATE
	P1						

**FOREIGN PATENT DOCUMENTS**

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	Translation	
							YES	NO
	F1							

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STATEMENT  
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(Use several sheets if necessary)

Docket Number: AM-00102.P.L.I-US	Patent Number: 10 072,975
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Applicant: Efimov et al.
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Filing Date: February 9, 2002	Group Art Unit: 1651
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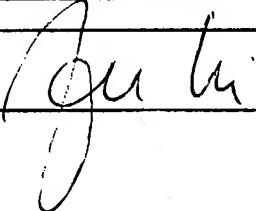
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Examiner Signature	<i>John M.</i>	Date Considered	<i>10/7/03</i>
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							YES	NO
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	F2	WO 92 20702	11 26 92					
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	F4	WO 94 22892	10 15 94					
	F5	WO 94 24144	10 27 94					
	F6	WO 99 14266	3 25 99					
	F7	WO 00 56746	9 28 00					
	F8	WO 00/56748	9/28/00					
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STATEMENT  
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(Use several sheets if necessary)

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Docket Number:  
AM-Q9102.P.1.1-USPatent Number:  
10 072,975Applicant:  
Efimov et al.Filing Date:  
February 9, 2002Group Art Unit:  
1651

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE IF APPROPRIATE
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Docket Number:  
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1651

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